

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/756,771
Applicant : Kunikazu KUCHINO *et al.*
Filed : January 14, 2004
Title : Photoelectron Generating Plate, Negative Particle Generating
Device, and Charge Removing Device and Equipment Using Such
Device
TC/A.U. : 2624
Examiner : Zeev V. Kitov
Docket No. : KUCH3002/BEU
Confirmation No. : 2338

RESPONSE TO NOTICE OF NON-COMPLIANT AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This paper is in response to the Notice of Non-Compliance dated August 14, 2009.

A listing of claims, which is identical to the listing submitted on December 17, 2008, begins on page 2 of this response. The claims were not amended in the last response, submitted on May 27, 2009.

Remarks are included on page 8.

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of claims:

1. (Currently amended) A photoelectron generating plate comprising on a substrate a photoelectron emission layer for emitting photoelectrons by an illumination of a light and having a barrier property[[]].

wherein a thickness of the photoelectron emission layer is greater than a maximum surface roughness of an underlying layer thereof, and

wherein the photoelectron emission layer is made of a ceramic material selected from the group consisting of titanium nitride, titanium carbide, zirconium nitride and zirconium carbide.

2. (Original) The photoelectron generating plate of claim 1, wherein the substrate is conductive.

3. (Original) The photoelectron generating plate of claim 2, wherein the substrate is made of a stainless steel.

4. (Withdrawn) The photoelectron generating plate of claim 1, wherein a conductive layer is located between the substrate and the photoelectron emission layer.

5. (Withdrawn) The photoelectron generating plate of claim 4, wherein the conductive layer is made of a metal.

6. (Cancelled)

7. (Withdrawn) The photoelectron generating plate of claim 1, wherein the photoelectron emission layer is formed by a deposition method.

8. (Withdrawn) The photoelectron generating plate of claim 1, wherein the photoelectron emission layer is conductive.

9.-10. (Cancelled)

11. (Original) A negative particle generating device comprising the photoelectron generating plate of claim 1 and a light source for illuminating a light thereon.

12. (Withdrawn) A negative particle generating device comprising the photoelectron generating plate of claim 2 and a light source for illuminating a light thereon, wherein the substrate in the photoelectron generating plate is electrically grounded.

13. (Withdrawn) A negative particle generating device comprising the photoelectron generating plate of claim 4 and a light source for illuminating a light thereon, wherein the conductive layer included in the photoelectron generating plate is electrically grounded.

14. (Original) The negative particle generating device of claim 11, wherein

oxygen gas runs through the surface of photoelectron generating plate to thereby have negative particles generated.

15. (Currently amended) A photoelectron generating plate comprising a barrier layer having a barrier property on a substrate and a photoelectron emission layer disposed on the barrier layer and emitting photoelectrons by an illumination of a light thereon[.].

wherein a thickness of the photoelectron emission layer is greater than a maximum surface roughness of the barrier layer.

16. (Original) The photoelectron generating plate of claim 15, wherein the barrier layer is made of an oxide of Si, Ti, Zr or Al, a nitride of Si or Al, or a composite thereof.

17. (Original) The photoelectron generating plate of claim 15, wherein the barrier layer is conductive.

18. (Original) The photoelectron generating plate of claim 17, wherein the barrier layer is made of a nitride or a carbide of Ti or Zr, indium tin oxide (ITO), or tin oxide, or a composite thereof.

19. (Original) The photoelectron generating plate of claim 17, wherein the substrate is conductive.

20. (Original) The photoelectron generating plate of claim 19, wherein the substrate is made of a stainless steel.

21. (Withdrawn) The photoelectron generating plate of claim 15, wherein the photoelectron emission layer is conductive.

22. (Cancelled)

23. (Original) A negative particle generating device comprising the photoelectron generating plate of any one of claims 15, 17 and 19 and a light source for illuminating a light on the photoelectron emission layer of the photoelectron generating plate.

24. (Original) The negative particle generating device of claim 23, wherein oxygen gas runs through the surface of photoelectron generating plate to thereby have negative particles generated.

25. (Original) A negative particle generating device comprising:

a mesh-shaped photoelectron generating member being electrically grounded; and

a vessel including therein a light source for illuminating a light to the mesh-shaped photoelectron generating member;

wherein the light is illuminated to the mesh-shaped photoelectron generating member and simultaneously air runs through a surface of the photoelectron generating member to thereby have negative particles generated,

wherein the mesh-shaped photoelectron generating member is installed in the vessel so that the air flowing in the vessel impinges onto the photoelectron generating member.

26. (Original) The negative particle generating device of claim 25, wherein the

light illuminated to the mesh-shaped photoelectron generating member is ultraviolet ray.

27. (Original) The negative particle generating device of claim 25, wherein the mesh-shaped photoelectron generating member is mounted on a mesh-shaped conductive member.

28. (Original) The negative particle generating device of claim 25, further comprising a ventilator for providing the air to the mesh-shaped photoelectron generating member.

29. (Withdrawn) A charge removing device comprising:

a light source emitting a light of a wavelength not less than about 200 nm;

a photoelectron generating plate for emitting photoelectrons by a light from the light source; and

a ventilator for having gas including at least oxygen to run near a surface of the photoelectron generating plate,

wherein the gas running near the surface of the photoelectron generating plate illuminated by the light from the light source is sprayed to a target member to thereby remove a positive charge thereof.

30. (Withdrawn) The charge removing device of claim 29, wherein the surface of the photoelectron generating plate, which emits the photoelectrons when the light is illuminated, also serves as a barrier layer.

31. (Withdrawn) The charge removing device of claim 29, wherein the photoelectron generating plate includes a photoelectron emission layer which emits

the photoelectrons when the light is illuminated and an underlying barrier layer.

32. (Withdrawn) The charge removing device of claim 29, wherein the surface of the photoelectron generating plate is electrically grounded.

33. (Withdrawn) A vacuum cleaner comprising the charge removing device of claim 29, wherein the gas from the charge removing device is sprayed to a floor to thereby suck a dust attached to the floor while removing positive charges thereon.

34. (Withdrawn) A vacuum cleaner comprising the charge removing device of claim 29, wherein the gas from the charge removing device is sprayed into a dust collecting unit to thereby remove positive charges of a dust collected therein and a wall of the dust collecting unit so that the dust attached therein can readily be eliminated.

35. (Withdrawn) An air blow device comprising the charge removing device of claim 29, wherein the gas from the charge removing device is sprayed to a target member with a high pressure to thereby blow off a dust attached to the target member while removing positive charges thereon.

36. (Withdrawn) The air blow device of claim 35, wherein the target member is a semiconductor, a liquid crystal glass or a photo disk.

37. (Withdrawn) An air shower device comprising the charge removing device of claim 29, wherein the gas from the charge removing device is sprayed to a human body or a target member with a high pressure to thereby blow off a dust attached thereto while removing positive charges thereon.

REMARKS/ARGUMENTS

The Notice of Non-Compliance was on the basis that the response submitted on May 27, 2009, did not include a complete listing of claims. Actually, the May 27 response did not include any listing of claims, because no amendments were made. Therefore, in reply to the Notice of Non-Compliance, the listing from the previous response, submitted on December 17, 2008, has been copied and is included above. No changes have been made to the listing.

For the reasons stated in the May 27 response, withdrawal of the rejections and expedited passage of the application to issue is requested.

Respectfully submitted,
BACON & THOMAS, PLLC

/Benjamin E. Urcia/

Date: August 27, 2009

By: BENJAMIN E. URCIA

Registration No. 33,805

BACON & THOMAS, PLLC
625 Slaters Lane, 4th Floor
Alexandria, Virginia 22314
Telephone: (703) 683-0500